Substance Use Among American Indians and Alaska Natives: Incorporating Culture in an "Indigenist" Stress-Coping Paradigm

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SYNOPSIS

Objectives: This article proposes a new stress-coping model for American Indians and Alaska Natives (AIs) that reflects a paradigmatic shift in the conceptualization of Native health. It reviews sociodemographic information on AIs, rates of substance abuse and related health outcomes, and the research supporting the model's pathways.

Observations: Although health outcomes among AIs are improving, large disparities with other racial and ethnic groups in the United States remain. Many health-related problems are directly linked to high rates of substance use and abuse.

Conclusion: Eurocentric paradigms focus on individual pathology. An "indigenist" perspective of health incorporates the devastating impact of historical trauma and ongoing oppression of AIs. The model emphasizes cultural strengths, such as the family and community, spirituality and traditional healing practices, and group identity attitudes.

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Introduction

Although health outcomes among American Indians and Alaska Natives (AIs) have slowly begun to improve, they remain poor, with substance use a principal causal factor. Although the AI infant mortality rate has declined in recent years, it remains 22% higher than that for the U.S. population as a whole (9.3 per 1,000 live births versus 7.6),[1] partly because of high levels of alcohol and tobacco use among AIs. During pregnancy, alcohol use among AI women is three times the national rate and tobacco use is 1.5 times as high. Four of the top 10 causes of death among AIs are alcohol-related: injuries (18% of all deaths), chronic liver disease and cirrhosis (5%), suicide (3%), and homicide (3%).[2] AI women have the second highest mortality rate from drugs (4.7 per 100,000 of all deaths).[2] AIs between 15 and 24 are twice as likely as their non-AI peers to die in automobile accidents, 75% of which are alcohol-related.[3] Suicide rates are also twice as high among AIs, with alcohol a key factor 80% of the time.[3]

Researchers have proposed various pathways to explain the association between high rates of alcohol and other drug use and misuse and related health consequences. Detailed discussions of these models applied to AIs have been presented elsewhere.[4] Among non-AI populations, preliminary findings suggest that cultural factors such as traditionalism,[5] parental attachment,[6] Afrocentricity,[7] racial identity,[7-9] and religiosity and spirituality[8,10] are critical factors or cofactors in substance use and its adverse consequences. The explanatory power of these cultural factors is moderated by traumatic stress, particularly stress associated with an oppressed group status. Traumatic stress includes stress from historical trauma, discrimination, microaggressions, and daily hassles.

Current stress-coping paradigms fail to fully consider how cultural factors and trauma predict substance use. In this article, we present a stress-coping model for AIs that incorporates the impact of historical trauma as well as the protective functions of family and community, spirituality and traditional healing practice, and AI identity attitudes. The model delineates pathways to substance use and related health consequences, in particular, HIV risk behaviors and mental health outcomes. In an earlier report[11] we introduced the preliminary model for AI women, focusing on the relationships between traumatic stress and health outcomes. Here we highlight the relationships among traumatic stressors, cultural protective factors, and substance use-related outcomes. After reviewing the model, we present socio-demographic information on AIs, review the research supporting the model's components, and conclude with directions for future research.

An Indigenist Stress-Coping Model

Most of the research literature on stress coping reflects firmly entrenched Eurocentric values, methodologies, and conceptual structures, which are largely irrelevant to indigenous communities.[12] In applying them, researchers run the risk of unintentionally reenacting colonial processes and compromising the validity of their findings.

A more productive and appropriate course for research in AI communities involves considering socio-historical experiences and attempting to assess their impact. Such an approach has the potential to yield new knowledge about substance use and related health consequences, unleashing what Churchill refers to as a "libratory" research dynamic in the field.[12] Toward this end, we have contextualized our stress-coping model within a "Fourth World," or indigenist, perspective. According to O'Neil, "Fourth World" refers to situations in which a minority indigenous population exists within a nation-state.[13] The nation-state, which wields institutionalized power and privilege, colonizes the subordinated minority population. An indigenist perspective recognizes the colonized position of indigenous peoples residing within the United States and advocates for their empowerment and sovereignty in a postcolonial world.[12]

Interpreting epidemiologic data on AI substance use outside a Fourth World context can be problematic. As Browne and Fiske note, failure to account for socio-historical context can lead to distorted perceptions of AI communities and erroneous concepts of the risk factors associated with substance use.[14] Many AI substance use problems are directly related to AIs' colonized status and associated environmental, institutional, and interpersonal sources of discrimination and stress. Moreover, barriers to care (lack of transportation, limited availability or accessibility of services) and avoidance of care emerging from a justifiable fear of discrimination can lead to high substance use rates and adverse health consequences.[14]

Our model provides a framework for understanding how AIs cope with traumatic life stressors in the face of colonization and for assessing the impact of these stressors on their substance use and associated health consequences. The model posits that associations between traumatic life stressors and adverse health outcomes are moderated by cultural

factors that function as buffers, strengthening psychological and emotional health, decreasing substance use, and mitigating the effects of the traumatic stressors (figure 1). Although a vast literature considers the interrelationships among stress, coping, and health, little empirical research has addressed either the particular culture-specific stressors of AIs or the coping strategies and protective aspects of indigenous culture.

Our model builds on the work of Dinges and Joos and Krieger.[15,16] Dinges and Joos expanded a model of stress and coping by including stressful and traumatic life events. They identified environmental contexts and "person" factors as potential mediators or moderators of stressful life events. Their vulnerability hypothesis posits that associations between life events and adverse health outcomes are moderated by preexisting internal and external factors that function as buffers. Positive, negative, or neutral health outcomes thus depend on the interaction of internal processes with the state of stress. Dinges and Joos found this model to be the most effective for depicting stress, coping, and health relationships for AI populations. We expect that the model can be generalized to substance-related health outcomes as well.

Krieger's work incorporates the health consequences of discrimination and ecosocial theory.[16] She underscores the importance of including identity processes and expressions of self as moderators of the relationshp between discrimination and health outcomes. Our model delineates the pathways between social experiences and substance use and health-related outcomes, thus providing a coherent means of integrating social, psychological, and cultural reasoning about discrimination and other forms of trauma as determinants of substance use and health-related outcomes.

SOCIODEMOGRAPHICS OF AMERICAN INDIANS AND ALASKA NATIVES

The 2.4 million AIs in the United States constitute about 1% of the total population, and the number of AIs is expected to grow more than 44% to 3.5 million by 2020.[17] Including individuals who also identify as Hispanic or multiracial, there are an estimated 4.1 million AIs in the United States, representing 1.5% of the U.S. population.[18]

AIs are not a homogeneous group but members of distinct and diverse tribal nations. The Bureau of Indian Affairs Federal Registry now recognizes 562 tribes at the federal level, and individual states recognize another 200 tribes. Tribal communities are diverse, with members speaking more than 200 languages.

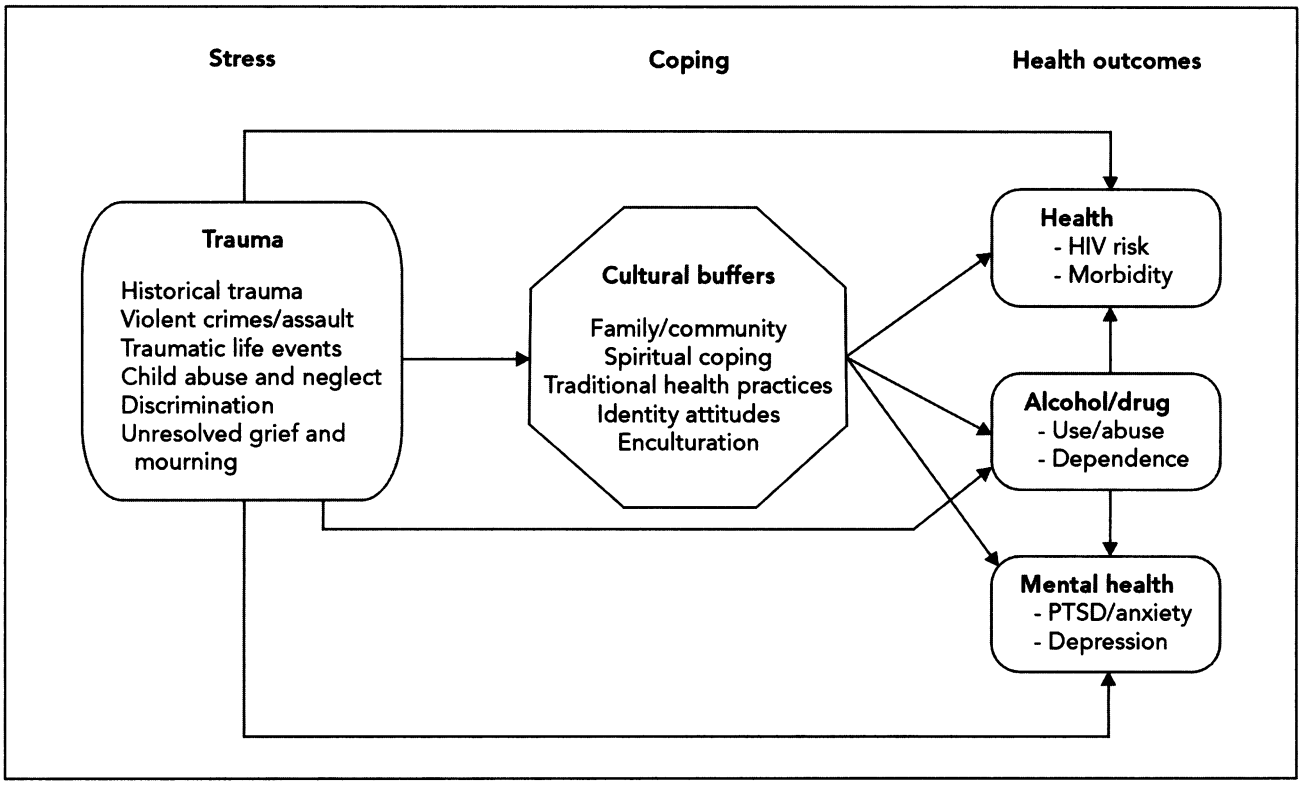

Figure 1. Indigenist stress-coping model

AIs face unique sociodemographic circumstances that place them at increased risk for adverse health outcomes and substance use. Compared with the U.S. population as a whole, they are younger (39% are younger than age 20 versus 29%) for the population as a whole. They are more likely to have a female-headed household (27% versus 17%). AIs also have lower high school graduation rates (66% versus 75%), and larger families (3.6 members versus 3.2 members) than the population as a whole and to live in poverty (26% versus 13%), and they are twice as likely to be unemployed.[19,20]

In the past 40 years, indigenous populations have undergone rapid urbanization, in large part as a result of federal policies termination and relocation. Currently, more than 60% of AIs live in urban settings.[18] Relative to rural AIs, urban AIs have higher infant mortality rates, higher mortality rates related to alcohol and injury, and higher rates of low birthweight.[18] Despite urbanization, the primary agency responsible for providing health care to AIs, the Indian Health Service, directs only 2% of its funds to cities, leaving urban AIs with little or no access to the health care to which they are entitled by law.[21]

Substance Use

There is no single comprehensive federal effort to collect data on substance use by AIs.[22] The data on AIs in federal studies (such as the Youth Risk Behavior Surveillance System) are often unreliable because of small sample sizes, or they are collapsed into an "other" category. With the exception of a few recent studies that focus on urban women,[23,24] most of the studies on AI substance use were conducted with reservation-based populations of youths or men.

Alcohol Use. Rates of alcohol use among AIs are high, although there is tremendous variation over time and by tribe, reservation, and region, and some studies report drinking prevalence that is similar to or lower than that of the general U.S. population.[4] Recent drinking prevalence studies indicate that urban AI populations may have higher rates than many reservation populations, which have higher levels of abstention.[4]

Alcohol is the most prevalent substance used by AIs.[25] Indeed, by the 12th grade, lifetime prevalence of alcohol use is almost universal, with 96% of AI boys and 92% of AI girls having used alcohol.[26] Compared with non-AIs, AIs tend to use alcohol earlier, use it more often and in higher quantities, and experience more negative consequences from it.[26]

Young AIs are at particular risk for alcohol abuse. In one study, alcohol drinking rates among eighth graders exceeded the rates for all other ethnic populations and were 50%-100% higher than for white students.[27] Prevalence of lifetime use of alcohol among young AIs is high, although comparable to rates among young non-AIs. The percentage of young AIs reporting becoming intoxicated has steadily increased since 1984-85, however.[28] Data from 1999 collected by the Substance Abuse and Mental Health Services Administration indicate that 21% of AI 12- to 17-year-olds had used alcohol in the past month. That rate is higher than the rate for white (19.9%), Hispanic American (19.8%), multiracial (16.1%), black (13.3%), and Asian American (13.0%) youths.[29]

AIs are five times more likely to die of alcohol-related causes than non-AIs.[29] Both AI males and females have higher rates of alcohol-related death in most age categories than the U.S. population as a whole.[4] Among AI males 27% of all deaths involve alcohol; 13% of AI women die from alcohol-related causes. Although alcohol-dependent mortality for AIs decreased between 1980 and 1991 (from 59.0 to 37.9 per 100,000), recent evidence suggests that the trend has since reversed. When the 1992-94 alcoholism death rate is adjusted for racial misclassification on AI death certificates, the rate is 45.5 per 100,000, which is seven times the alcoholism death rate of the general population.[1]

Drinking styles include abstinence, moderate social drinking, heavy recreational drinking (binge drinking or alcohol abuse), and anxiety drinking (alcoholic or alcohol-dependent drinking). These behaviors are similar in AI and non-AI populations, as are the many factors causally linked to these patterns (age, geography, poverty, youth peer influences, alcohol policy).[4] AIs report high rates of abstinence, ranging from 33.0% in Maine to 83.0% in Mississippi.[29] The proportion of occasional or moderate drinkers (those consuming one to four drinks in the past month) range from 12.8% in Minnesota to 47.0% in Georgia.[29]

Heavy recreational drinking accounted for 75% of all AI alcohol-involved deaths; anxiety drinking accounted for 25%.[4] AI heavy recreational drinking rates (those having five or more drinks in the past month on any one occasion) ranged from 9.8% in Oklahoma to 49.6% in Georgia.[29] Heavy recreational drinkers are predominantly men between the ages of 15 and 35 who are students or new participants in the workplace and who drink sporadically (at times in a binge-like fashion) at parties, at night, and on weekends. Anxiety drinkers are predominantly downwardly mobile, unemployed, and socially and

culturally marginal men.[30] They drink alcohol or alcohol-related substances such as Lysol, usually alone or with peers who are also culturally and socially alienated.

Illicit Drug Use. There is a paucity of reliable data on illicit drug use among AIs, with little or no information on adult populations. Data for 1999 among people older than 12 indicate that 51% of AIs report ever having used illicit drugs. That figure is higher than the rates for multiracial (42.2%), white (42.0%), black (37.7%), Hispanic (31.2%), and Asian (20.8%) Americans. Among 12- to 17-year-old AIs, 30.5% reported having used illicit drugs in the past year. That figure is significantly higher than the rates for other ethnic groups, which ranged from 13.0% to 21.6%. AIs also reported the second highest current rate of illicit drug use. AIs had the highest past-month illicit drug use in each age group (12-17 years: 18.4% versus 5.5%-9.2%; 18-25 years: 25.4% versus 7.1%-17.0%; 26-34 years: 18.9% versus 2.0%-10.6%; 35 or older: 3.7% versus 1.5%-3.8%).[31]

Data from national surveys of students indicate few differences in the type of drugs used by AIs and other groups. The prevalence of lifetime use of inhalants, cigarettes, and smokeless tobacco is high but comparable to rates reported by non-AIs.[28] However, there are some notable differences. Relative to their non-AI peers, AI 12th graders were much more likely to have used marijuana (38% versus 16%), cocaine (7% versus 1%), stimulants (9% versus 4%), and psychedelics (6% versus 3%) in the past month. Overall, decreasing drug use trends among AI students parallel national trends, with the exception of marijuana and hallucinogen use, which are on the rise among AI students.[28] AIs had the highest rates across all age groups for past-year marijuana use: 12-17 years: 18.4% versus 6.9%-7.3%; 18-25 years: 25.4% versus 6.1%-14.4%; 26-34 years: 12.6% versus 3.6%-9.2%; 35 years or older: 3.7% versus 1.0%-3.3%.[31] Among 12- to 17-year-olds, current hallucinogen use was also higher (3.7% for AIs versus 0.2%-1.1% for non-AIs). Tobacco use rates are extremely high, with 44.2% of 12- to 17-year-olds, 62.4% of 18- to 24-year-olds, 51.2% of 26- to 34-year-olds, and 35.0% of AIs older than 35 reportedly smoking cigarettes in the past month.[32] Current illicit drug use was highest among 12- to 17-year-olds (22.2%).[31]

Young reservation-based AIs have higher drug use rates than other young people, particularly for marijuana, inhalants, and stimulants. On most reservations, 50%-60% of young people report using alcohol and other drugs.[33]

As with alcohol prevalence data, drug prevalence data cannot capture the effect of using on AI populations. Mortality data are unequivocal. The age-adjusted mortality from drugs for AIs is 18% higher than for the U.S. population overall. It rose from 3.4 deaths per 100,000 in 1979-81 to 5.3 deaths per 100,000 in 1992-94.[1]

Substance Use and Mental Health. Research has documented the high comorbidity of substance use and mental health problems in the general population.[34] Depression and anxiety are observed in disproportionate rates among drug-abusing mothers.[35] Post-traumatic stress disorder (PTSD) often accompanies substance abuse,[34] with comorbidity rates of 11%-91%.

Among AIs, high rates of psychiatric problems and related comorbidity with substance use have been reported, with estimates of 20%-63% among adults. These rates are often higher than in non-AI groups.[36] Depression, one of the most prevalent psychiatric disorders in AI communities,[37] is associated with substance abuse, living in an urban area, and lack of education.[38] Walker and colleagues report that AI women with a history of alcohol dependence had higher rates of depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoses, and obsessive-compulsive behaviors than women without a history of alcohol dependence.[24] In examining admissions to acute psychiatric care among First Nations people in Canada, Dalrymple and colleagues discovered that depression was underdiagnosed, substance abuse was commonly involved, and reasons for acute psychiatric care were atypical, often resulting from economic, social, and cultural dislocation.[38]

Substance Use and Risky Sexual Behaviors. Studies of Native people in Canada and the United States have documented inconsistent condom use [39-42] and an increase in HIV prevalence.[43] Although the link between substance use and sexual behaviors that increase the risk of HIV has been well documented among non-AIs, researchers have begun to examine this issue among AIs only recently.[44,45]

Substance use has been associated with precocious and risky sexual activity among young AIs,[46] but only a few studies have focused on adults. Preliminary findings indicate that urban AI drug users are at greater risk for HIV infection than their reservation counterparts because they trade sex for money or drugs and practice unsafe sex with drug use.[47] Fisher and colleagues found that white men who had sex with both

white and Alaska Native women were significantly less likely to use condoms with Alaska Native women.[48] In a related study, 50% of AI drug users reported drinking until drunk and engaging in unprotected sex during blackout periods.[49] A study of 11 reserves in Canada revealed high rates of unprotected intercourse. Contrary to stereotypic expectations, however, the minority who reported sexual behavior when drunk or high were not more likely to engage in unsafe sex.[50] Although no longitudinal studies on sex and substance use examine AIs, preliminary cross-sectional research indicates that substance use may mediate the relationship between trauma and sexual behaviors that increase the risk of HIV infection among AI women.[51]

Traumatic Life Stressors and Substance Use

Historical Trauma. Historically, the government has attempted to subordinate and deculturate AIs on their own lands. This colonial oppression has taken many forms, including forced removal and relocation of AIs from traditional land bases and the disproportionate removal of AI children and placement into non-AI custodial care or "blind" adoption.[12] The disempowerment of indigenous peoples has been a primary goal of the colonizers since first contact, with the intent of destabilizing and ultimately exerting colonial dominion over each indigenous nation.[52] This destabilization process has targeted indigenous health.

The cumulative effects of these injustices have been characterized as a "soul wound" among AI peoples[53] and constitute considerable historical trauma.[54] This trauma is compounded intergenerationally and experienced at an individual as well as a collective level. Although most of the evidence for the relationship between historical and cumulative traumas and associated health outcomes among AIs is anecdotal, AI community-based observations and experiences provide supportive preliminary empirical evidence. Among the Lakota, Brave Heart found evidence of a "historical trauma response" that includes depression, survivor guilt, unresolved grief, high mortality rates from cardiovascular disease, and violent death.[54] Another study of the Oglala Lakota found that those who attempted suicide had experienced a high incidence of loss over the lifespan.[55] O'Nell found that traumatic history and racism played a significant role in depression among the Flathead.[56] Several researchers who have documented high rates of depression,[57] PTSD,[58] alienation,[59] and alcohol abuse[24] among AIs surmise that there are links to historical trauma, although empirical support for these observations has yet to emerge.

Violent Crimes. Prejudice and discrimination toward AIs assume many forms, ranging from avoidance and disregard to murder. According to the U.S. Department of Justice, AIs are the victims of violent crimes at a rate (124 per 1,000) that is more than 2.5 times the national average. The rate for AI women is almost 50% higher than that reported by black males, and the rate for AI males is twice that for all males. The violent crime rate is highest for urban AIs (207 per 1,000) and lowest for AIs residing in rural areas (89 per 1,000). AIs experience primarily assault-related violence, with 56% experiencing simple assault, 28% aggravated assault, and 6% sexual assault. AIs are more likely than people of other racial groups to report interracial violence: 90% of AI victims of sexual assault report that their assailants were white or black.[60] AI women appear to be at particularly high risk of physical and sexual assault,[61] as are gay, lesbian, bisexual, and transgender (two-spirited) AIs.[62]

Traumatic Life Events. Manson and colleagues summarize the findings of three studies exploring traumatic life events and PTSD among young AIs.[63] The studies, conducted between 1989 and 1992, involved 477 AIs between the ages of 8 and 20 years, who were interviewed on reservations or in tribal secondary schools. Among the respondents, 51%-62% had experienced at least one traumatic event, such as a shooting, rape, car accident, or overdose. Among those having experienced a traumatic event, rates of PTSD symptoms were high, with 50%-87.4% persistently reexperiencing the traumatic event. In one study, 52% of the students who had experienced a traumatic event met the criteria for diagnosis of an additional mental disorder. The number of traumatic experiences was directly related to the likelihood of a disorder other than PTSD.

Research on the relationship between trauma and substance abuse and dependence is limited primarily to non-AIs who are exposed to specific traumatic events, such as disasters, assault, and combat.[64] This research indicates that people who have experienced violence are at higher risk for substance abuse [65,66] and that there is a strong association among violent assault, PTSD, and substance use.[67,68] Studies examining social indices of drinking or alcohol abuse suggest a positive relationship between alcohol abuse and exposure to traumatic events, especially to certain noxious aspects of trauma, such as witnessing a homicide.[64] In one of the few studies among AIs, Robin and colleagues show that both

specific and cumulative trauma among AIs is a significant factor in their high rates of substance use and depression.[36] Their evidence is based on studies of disorders that are comorbid with PTSD in non-AIs, the possibility of a specific traumatic depression among AIs, and the high degree of trauma and PTSD experienced by AIs.

Child Abuse and Neglect. Maltreatment rates of AI children are significantly higher (19.8 per 1,000) than for Hispanic American (12.6), white (10.6), or Asian/Pacific Islander (4.4) children.[69] Between 1992 and 1995 AIs and Asian Americans were the only ethnic groups to experience a rise in the rates of child maltreatment documented by Child Protective Services, with the increase for AI children three times that of Asian American children (18% versus 6%).[60]

AI children are also more apt to experience the trauma of out-of-home placement. In 1996, 12.5 of every 1,000 AI children were placed in substitute care—almost twice the national rate of 6.9 per 1,000.[70] Despite federal policies, such as the Indian Child Welfare Act, that demand stricter standards in determining neglect in AI families and an increase in the number of AI child welfare programs, the number of AI children being removed from their homes continues to increase.[71] This rise has occurred while the number of children in care for most ethnic groups has decreased.

Delayed trauma reactions to child sexual abuse may lead to substance-related problems. Alcoholic women are twice as likely as nonalcoholic women to report a history of childhood sexual abuse.[72] Preliminary studies of both male and female non-AIs suggest a causal connection between childhood victimization and drinking problems.[73] Kovach has postulated that the link between childhood abuse and adult alcohol abuse is mediated by a delayed onset of PTSD symptoms in adulthood with which adults attempt to cope through alcohol abuse (self-medication).[74] The more severe and chronic the childhood abuse, the greater the risk for adult alcohol problems.[64]

Discrimination. Research has focused on the psychological cost of being a target of discrimination at individual, cultural, and institutional levels, with ample evidence of the effect of discrimination on health-related outcomes among non-AI populations. Discrimination has been related to feelings of powerlessness,[75] global measures of distress,[76] depressive symptoms,[77-79] anxiety symptoms,[79] and poor physical health and high blood pressure.[80] One of the few studies specifically addressing discrimination among AIs found perceived discrimination to be related to substance use and depression among adults.[81]

The combination of multiple oppressed statuses and the chronic strains associated with multiple forms of discrimination have particularly devastating effects on the physical and mental health of people of color.[76] Prolonged and repeated trauma (in contrast with a single traumatic event) has been associated with denial, numbing, and disassociate reactions among children.[82]

Unresolved Grief and Mourning. Validation of traumatic events is a critical step toward healing. Acknowledgment and remorse on the part of perpetrators can be immensely valuable in the healing process. The United States has yet to acknowledge its role in the historical and continuing traumatization of indigenous peoples. This lack of validation contributes to a shared sense of unresolved grief and mourning.

Of primary concern to AI health care workers is the extent to which unresolved grief is associated with substance-related problems and stress-coping reactions. According to Duran and Duran, the overwhelming grief and associated trauma-related reactions are exacerbated as ongoing discrimination impinges on the inability to mourn the loss of one's land and place.[53] The unresolved grief and trauma-related reactions are passed on intergenerationally through dysfunctional family coping patterns, including substance use. Researchers have yet to adequately address the effects that unresolved grief over such traumas as boarding school and non-AI adoptions have on later substance use and adverse health outcomes, although Robin and colleagues hypothesize that cumulative traumas among AIs are significant factors in high rates of substance use, traumatic depression, and PTSD.[36]

Trauma and Substance Use Outcomes. The pathways and temporal relationship between different types of traumatic experience and substance misuse are complex and multidimensional. Several causal pathways may explain the co-occurrence of PTSD and substance use, and they may not be mutually exclusive.[64] Many of the stress-coping theories of alcohol use do not take into account the nuances of cumulative and ongoing discrimination as stressors for AIs. Although some researchers have attempted to address this issue using self-medication hypotheses, too often the focus has been on identifying premorbid pathological personality predispositions at the cost of framing such individual pathology within a socio-historical context. As a result, researchers lose sight of primary prevention opportunities as well as opportunities to collaborate

with AI communities in fighting discrimination and substance use problems simultaneously.

Although there is evidence of the comorbidity of alcohol-related problems and psychopathology (in particular, depression) among AIs, studies of comorbidity fail to resolve the temporal ordering of substance use problems. The relationship between life stressors, cumulative trauma, and daily levels of discrimination for AIs and premorbid personal dispositions for some people (such as depression) is bi-directional, as is the association with family and peer substance use. The consensus among AI health researchers to date is that until there is compelling and consistent evidence that specific personality processes have broad effects on distress or disease or can be linked to substance abuse, they should not be singled out for study.[15] To better discern the temporal relationship between such traumatic stressors and substance use in future studies, researchers need to control for antecedent environmental risk factors and personal dispositions to highlight the unique effects of stressors on substance use and health-related consequences (such as HIV risk behaviors).

Cultural Moderators of Traumatic Stress and Substance Use

Clearly, not every AI who experiences high levels of traumatic stress develops substance abuse problems or other health-related negative consequences. Which factors may buffer the impact of these traumatic stressors? In this section, we overview the research suggesting that family and community factors, spirituality and traditional health practices, and AI identity attitudes moderate trauma-related stress in AIs.

Family and Community. AI families and communities have displayed extraordinary resilience and have historically served as the major pathways to well-being among AI people. Despite the brutal impact of historical traumas, many AI families and communities have resisted, survived, and even revitalized themselves. Indeed, it is through family and community that AI culture has endured and been revived within contemporary urban and rural AI contexts. Traditional and contemporary AI cultural practices provide a resource for confronting current and historical traumas. In urban settings, family and community practices are maintained through ties to reservation communities as well as urban organizations and support systems. Differences in tribal practices may be maintained along with commonly shared "pan-Indian" practices. The community also plays an important role in preparing members to deal with traumas and life problems. In many AI communities, certain helping roles are delineated and handed down from generation to generation.

Data on non-AIs suggest that family support has a significant effect on wellness and substance use.[83] Significant relational bonds with a parent, other relative, or caregiver are also critical in the development of individual resiliency.[84,85] Parental bonding and support have also been identified as buffers against substance use in adolescence and adulthood.[83,86]

The contribution of family support to wellness may be even more pronounced in AI families, given the primacy afforded the family in AI communities. The family serves as the major social group for many AI people and may strongly influence social relationships and standing in the community.[87] From an indigenous perspective, poverty has been described as being without relatives.

While research with other populations has shown that having numerous family commitments may increase stress for some people, this may be less likely for indigenous people. Concepts such as enmeshment and codependence may not apply to traditional indigenous family systems, in which extended families are often the norm. These extended families may include blood and nonblood kinship networks of aunts, uncles, grandparents, and cousins, in which family members rely on one another throughout the lifespan for guidance, support, and role-modeling.

Spirituality and Traditional Healing Practices. For AIs, survival depends on fulfilling tribal, communal, and personal responsibilities and obligations associated with one's tribal-specific religions. Spirituality and the rituals of traditional AI religions provide sustenance to AIs, particularly in the face of adversity. A discussion of the diversity of AI religions and spirituality is beyond the scope of this article (see Hirschfelder and Molin for more information[88]). We provide a brief historical overview to contextualize the role of AI spirituality in relation to substance use.

AI peoples have been subject to 500 years of missionary activities and Christian proselytizing designed to eradicate AI religious practices, prohibit access to sacred sites, and remove indigenous peoples from sacred land bases.[89] Christian missionaries preached against traditional AI practices such as ceremonial dancing, singing, potlatching, curing, and healing in attempts to convert AIs to the "true faith."[88,90] In 1883 a Court of Indian Offenses was instituted on AI reservations to eradicate "certain of the old heathenish

dances" and to supplant traditional practices with Christianity and "civilized" practices.[88] By 1892 the policy was expanded to include specific cultural and spiritual practices, such as dances, traditional medicines and healing, and funerary rites. Violation of these prohibitions was met with strict punishment, including the withholding of food rations and imprisonment for up to six months.[88]

AIs actively resisted these practices. They formed revitalization movements (such as RedBird Smith and the Keetowah Society, a resistance organization of traditionalist Cherokees imprisoned in the early 1900s); developed pan-tribal religious movements (such as the Ghost Dances of 1870 and 1890); and created pan-tribal religious practices (such as Native American Church and the use of peyote). Nativistic movements began to form, with temperance, abstinence, and re-traditionalization (such as the Sun Dance) being key ways in which AIs expressed resistance to colonial subjugation.

Contemporary abstinence and re-traditionalization movements are framed as critical pathways to individual, communal, and tribal healing. Contemporary nativistic movements aimed at preventing and treating substance use include the Inupiaq Ilitqsat (Eskimo Spirit Movement), the Native American Church (Peyote Way/Road), Gaiwiio (Handsome Lake Movement), the Northwest's Indian Shaker Church movement, and the Red Road sobriety movement.[91] All of these nativistic movements have at their core the revitalization of indigenous traditions accompanied by traditional living.

Spirituality permeates all aspects of Native life and lifeways. It is different from non-AI spirituality in significant ways. AI spirituality is connected to the natural world, whereas Judeo-Christian spirituality is focused on a heavenly world. Land, animals, birds, plants, rock, land, and water are sacred for AIs and filled with spirit and tribal-specific meanings. Land plays a critical sacrosanct role: it is itself sacred, with tribal-specific meaning, and it is also often directly connected to ritual sacred sites, where ceremonies and obligations are expected to be fulfilled. Relocation from traditional homelands is thus a particularly devastating traumatic stressor.

Native spirituality also tends to be circular in nature and encompasses sacred directions that contain sacred meanings, teachings, and responsibilities (the directions and teachings vary tribally and within AI communities). For example, among some AI communities, the four directions can symbolize mental, physical, emotional, and spiritual elements of the universe and of the person. When all directions are in harmony and balance, there is wholeness and wellness. Disease or dis-ease results from disconnection from this balance and harmony. Although there is tremendous ceremonial diversity between and within tribes for healing such imbalances, reconnecting the "sick" person with family and community is central to the healing process. Participation in traditional spiritual practices serves not only to heal but also to maintain and sustain health, thus becoming a critical protective factor in dealing with adversity and other stressors.

Empirical studies among non-AIs suggest that spiritual methods of coping are associated with psychological, social, and physical adjustment to stressful life events and with physical and mental health.[92,93] Studies suggest that spiritual coping continues to predict significant variance in outcomes to life stressors even after controlling for the effects from nonspiritual coping measures and global religious measures.[93,94] Mechanisms to explain the relationship between spiritual coping and health outcomes include spiritual coping as antidotes to anxiety, as a source of meaning in the world, and as motivation to find and experience the sacred when a crisis occurs.[92]

For AIs spiritual coping and immersion in traditional health practices exert intrinsic health benefits that may reduce substance use and improve other health-related outcomes. Such practices include use of indigenous roots and teas, healing ceremonies (pipe, drum, naming, or sweat lodge rituals), and consultation with traditional healers (seers, dreamers, herbalists, spiritual healers, holy persons, and medicine men and women).[95-97] Ethnographic studies have shown how AIs have benefited from traditional healers treating psychological distress, substance abuse, physical health, and PTSD.[98-100] Traditional healers often are used in conjunction with Western medical or mental health services.[96,101,102] As Gurley and colleagues point out, Western biomedical services are used to address physical symptoms, whereas traditional healing is sought to address the circumstances from which the symptoms arose, such as violation of culturally sanctioned taboos.[102]

Urban AIs, who may live far from their ceremonial lands, use traditional healers and health practices at the same rate as or more frequently than non-AIs use complementary medicine.[95,96,103] One study found that more than one-half of those who used traditional practices (herbal medicines, smudging, specialized healing ceremonies, and sweat lodge ceremonies) reported significant improvement in health.[95] Urban

AIs living with HIV incorporate traditional values and healing practices into their health care.[104]

Despite the documented anecdotal and empirical evidence of the importance of traditional healing and spiritual practices, the stress-buffering role of traditional spiritual practices in relation to AI substance use has yet to be empirically investigated.

AI Identity. A positive AI identity has long been considered important for cultural continuity, survival, and psychological wellness.[87] Researchers have proposed numerous conceptual frameworks and stage models of identity development to describe identity processes among non-AI populations.[105,106] In AI research, identity has been conceptualized within three main frameworks: demographic indicators, self-concept and self-perception, and self-identification (see Walters for a full discussion of these frameworks and their limitations[107]).

Building on these frameworks, Walters has conceived the Urban American Indian Identity (UAII) model, which aims to capture the negotiation of positive identity attitudes of urban AIs toward themselves and other AIs.[107,108] The UAII model and corresponding scale identify four domains through which AIs may progress in their identity development: internalizing negative colonizing self and group identity attitudes and overvaluing the dominant culture (internalization), developing a consciousness while feeling alienated in both AI and non-AI worlds (marginalization), shedding internalized stereotypes and colonizing attitudes (externalization), and achieving integrated identity attitudes and developing psychological buffers that combat residual colonizing attitudes (actualization). Embedded in each of the four domains are five identity attitude dimensions referred to by the acronym PERCS: political (AI land and treaty rights), ethnic (sense of shared heritage and "peoplehood"), racial (phenotype and blood quantum issues), cultural (tribal values, language), and spiritual (sacred sites, religious freedom).

Little research has examined ethnic identity as a protective mechanism among AIs. In a cross-sectional survey of 332 AIs, Walters demonstrated that the UAII domains accounted for 10%-21% of the variance in self-esteem, depression, anxiety, and interpersonal sensitivity, after controlling for relevant covariates.[108] Researchers have yet to adequately test the moderating role of identity in substance use problems.

Identity is often erroneously equated with acculturative processes. In fact, according to Walters, discrepant findings in the health research may be partly due to the confounding of identity attitudes with acculturative behaviors.[107] In a large survey of urban AIs, she found that identity attitudes predicted only 14%-21% of the variance in acculturative styles. She demonstrated that AIs could hold very negative attitudes about themselves as Indians and toward Indians as a group while maintaining AI customs and behaviors. These findings underscore how research on substance use and related health outcomes must distinguish between these concepts in order to accurately identify potentially differential moderating or mediating effects.

Several researchers have suggested that ethnic identity attitudes or acculturative behaviors do not capture the multidimensional nature of cultural experience or connection to one's cultural behaviors[109,110] and have proposed looking instead at enculturation.[111] In contrast to acculturation, which refers to the process by which people from ethnic minorities adopt and assimilate into the majority culture, enculturation is the process by which members of a minority group learn about and identify with their cultural heritage, norms, and traditional values. As a protective mechanism, enculturation can either mitigate the negative effects of a risk factor (such as trauma) or enhance the effects of another variable (such as identity attitudes) to decrease the probability of a negative outcome (such as drinking problems).[111] Enculturation is consonant with the recent phenomenon of re-traditionalization in urban and rural AI settings.

Discussion

AIs experience far worse health outcomes than other ethnic groups in the United States. The AI-specific stress-coping model presented here conceptualizes these outcomes within the colonized, Fourth World context of modern AI communities. It describes the role of trauma in relation to high rates of substance abuse among AIs, which are linked to adverse physical and mental health outcomes as well as sexual behaviors that increase the risk of HIV. According to the model, cultural strengths such as the family and community, spirituality and traditional healing practices, and AI group identity attitudes are key moderators.

The indigenist stress-coping model provides an important decolonizing conceptual framework—it is, in essence, a culturally relevant road map from which substance abuse researchers can study the pathways among traumatic stress, cultural buffers, and substance use outcomes and other related health consequences. Many researchers and AIs have called for delineation

of the role of historical trauma and cultural identity processes in substance use among AIs. Until now, however, no stress-coping framework has delineated these pathways. The indigenist stress-coping model is a preliminary response to this need.

Our indigenist stress-coping model can be used as a basis for longitudinal or experimental research. It represents the first phase of designing culturally relevant substance use studies for AIs. Temporal ordering of the factors as well as the pathways and linkages among the factors should be identified and confirmed in future longitudinal research. Additional research is also needed to identify the validity of the model for important demographic variables (gender, tribe, geographic region). Given the preliminary nature of the model, we anticipate that other AI cultural-specific factors will be identified by AI communities for incorporation into the model as these communities have an opportunity to tailor the model to better fit their cultural needs. Indigenous community members and leaders must be involved throughout the research process in order to decrease the risk of repeating colonizing research processes—processes that are antithetical to the indigenist perspective the model is intended to reflect.

Data derived from the testing of this model and its variations will yield more culturally valid information from which postcolonial interventions can be designed. Specifically, identification of AI resilience and cultural protective factors will facilitate incorporation of these cultural processes in empirically based prevention and intervention research efforts. The indigenist stress-coping model thus reflects a decolonizing framework from which culturally relevant and valid data can be drawn and, ultimately, culturally relevant interventions developed.

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